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EQUITY RESEARCH

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# Shield AI


**TEAM**

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## Shield AI

Visit Website

Shield AI is an American aerospace and defense technology company.

#defense

**REVENUE**
**$267,000,000**
2024

**VALUATION**
**$2,300,000,000**
2024

**GROWTH RATE (Y/Y)**
**64%**
2024

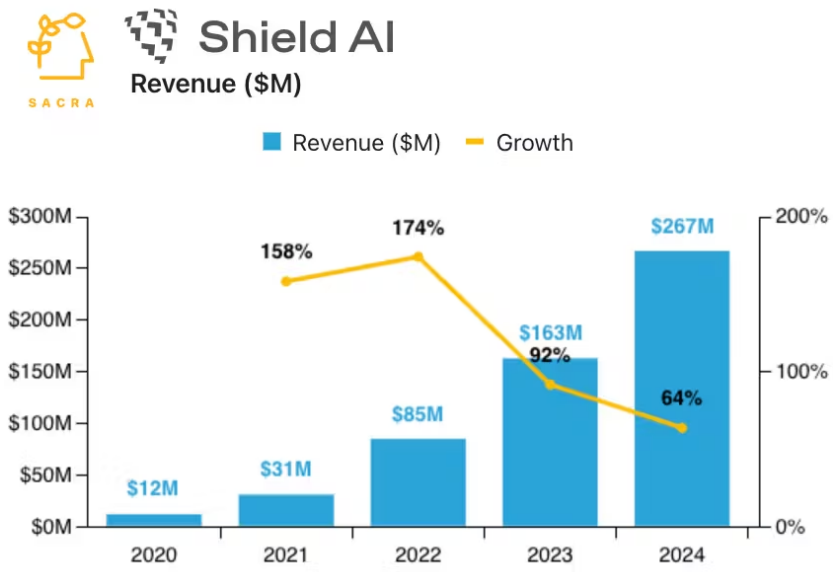
**FUNDING**
**$791,750,000**
2023

### Details

**HEADQUARTERS**
**San Diego, CA**

**CEO**
**Ryan Tseng**

## Revenue




Sacra estimates that Shield AI hit $267M in revenue in 2024, up 64% from about $163M in 2023. Shield AI's growth trajectory has been enabled by a series of lucrative contracts and key acquisitions.

The company received its first major contract in 2016 from the U.S. Department of Defense's Defense Innovation Unit (DIU) autonomy program. It acquired Heron Systems and aerospace company Martin UAV to further strengthen its product line and technological capabilities. In 2021, the company received a $7.2M contract from the U.S. Air Force. In 2022, they won another contract from the Air Force worth $60M.

Lastly, team size has increased from 150 employees (around 2019) to approximately 525 as of September 2023, suggesting scaling operations and revenue growth.

## Valuation

In December 2022, Shield AI raised $165 million in a Series E funding round, which brought the company's total funding to $573 million and increased its valuation to $2.3 billion, nearly doubling its value in less than a year. Previous investors include Snowpoint Ventures, Riot Ventures, Disruptive, Homebrew, Point72 Ventures, Andreessen Horowitz, Breyer Capital, and SVB Capital.

In 2022, Shield AI's estimated revenue was $95M (up 46%) for a revenue multiple of 24x, which is a bit lower than that of Anduril (36x), which is growing slightly faster and is the market leader among national defense-focused startups.

## Product


Shield AI was founded in San Diego in 2015 by Ryan Tseng (founder of WiPower, acquired by Qualcomm), Brandon Tseng (former NAVY Seal), and Andrew Reiter (ex-Draper Labs) to build technologies like artificial intelligence-powered fighter pilots and drones for defense operations.

The core of Shield AI's product ecosystem is Hivemind, an AI and autonomy stack that serves as the "brains" for their drones and aircraft.

Hivemind enables drones and aircraft to operate autonomously even in GPS- and communication-degraded settings. Machine learning algorithms help their drone and aircraft perform complex tasks, such as room clearing and navigating "fatal funnels"—areas during an active threat or military operation where the greatest numbers of fatalities tend to occur—without human intervention.

Shield AI's Nova-class autonomous quadcopter drones—enabled by Hivemind—serve as a reconnaissance tool in close-quarters combat scenarios. During military operations, Nova drones can fly into hostile buildings, take photos and create maps that are then transmitted to the soldiers on the ground, aiding their decision-making and mitigating the risk of physically entering the building.

Expanding its product line, Shield AI acquired Martin UAV in 2021 and introduced the V-BAT, a vertical take-off and landing (VTOL) aircraft. This VTOL capability makes V-BAT highly adaptable for various mission types and terrains. In 2022, Brazil's defense unit placed an order for a batch of V-BATs, showing international interest in Shield AI's innovative solutions.

## Business Model

Shield AI flips the traditional business model of defense contracting.

A typical defense contractor like Lockheed Martin or Boeing typically works with the Department of Defense by waiting for a request for proposal (RFP) and then starting their product development process. Cost-plus contracts then make sure those contractors are paid for all the expenses incurred during the process, with an extra “plus” on top to give them a 5-10% profit margin.

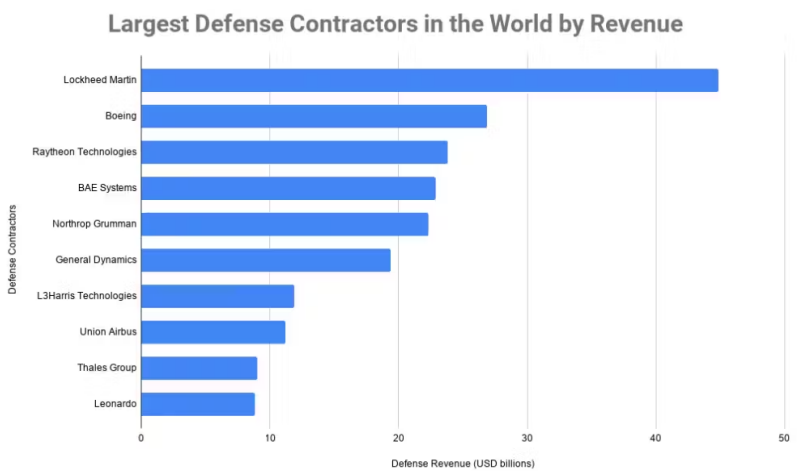
Shield AI, on the other hand, front-loads their R&D, taking on the risk of product development but with the benefit that they can present a pre-developed product line to the DOD and other allied military forces. That makes it easier for Shield AI and other aerospace and AI startups to sell into national governments, because there’s no history of cooperation to fall back on as with companies like Lockheed Martin, Raytheon, and Boeing.

Shield AI’s model is more akin to that of a tech company than a traditional defense contractor, and they are targeting a margin profile more akin to that of commercial tech companies than traditional defense contractors as well: in the 40-50% range, in stark contrast to the 5-10% of the defense industry.

This healthy margin theoretically allows Shield AI to then be able to reinvest more aggressively in R&D than typical defense contractors, driving a cycle of innovation and growth, particularly when it comes to the R&D-heavy emerging fields of AI and drones.

Shield AI's business model has been validated by successful contracts and collaborations with governmental bodies, including the US Department of Defense's Defense Innovation Unit (DIU) and the Brazilian Armed Forces.

## Competition




Shield AI’s key competition is the large defense primes like Boeing, Lockheed Martin, and Raytheon. 86% of all aerospace and defense revenues went to the 10 largest defense contractors as of 2016, reflecting advanced and continuing consolidation in the space.

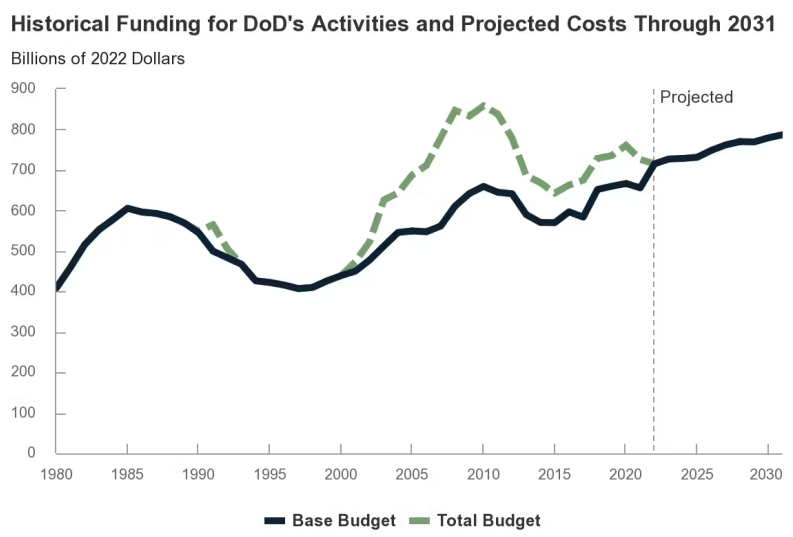
Those large defense contractors aren’t unaware of the rapid advancement in technologies like unmanned aircraft and AI, each one starting its own venture capital arm to invest in startups that are working on these technologies—or building out their own versions of similar product lines.

Boeing, for example, already has an autonomous fighter jet in development known as the MQ-28 Ghost Bat. Kratos, the builder of the experimental, AI-run aircraft Valkyrie that the Air Force has now been testing for years, reported $900M of revenue in 2022. Attack drones built by General Atomics ($2.8B revenue in 2022) have already been used in combat across theaters in Iraq and Afghanistan.

Then there are other relatively software- and AI-first startups like Anduril. But while Anduril and Shield AI might compete for certain contracts, viewing them strictly as rivals overlooks the broader industry context and the ways in which their success benefits each other.

Much like how Uber's regulatory battles paved the way for Lyft in the ridesharing industry. Anduril's successes have demonstrated to government agencies that startups can be viable contractors, thus reducing perceived political risks for decision-makers and opening doors for other startups like Shield AI.

## TAM Expansion




While Shield AI faces stiff competition from large defense contractors when it comes to rolling out the next generation of military hardware and software, the upside for Shield AI is that they operate in a huge and growing market.

The US is the largest military spender in the world by a large margin, and the US military budget makes up the largest share of the discretionary US federal budget spend. In 2022, the US spent $727B on the Department of Defense (DoD). Total spend across all of NATO crossed about $1T in 2022.

In 2020, the average total investment for autonomy and AI-related programs within the US Armed Services and DARPA (Defense Advanced Research Projects Agency) was $5.2B over three years.

The FY2021 US defense budget request allocates $1.7B to autonomous technologies to enhance “speed of maneuver and lethality in contested environments” and the development of “human/machine teaming,” as well as $800M to artificial intelligence.

In addition, the Air Force is receiving new funding for a Collaborative Combat Aircraft (CCA) program for investment into autonomous software and drone research & development.

## Risks

**Friction and procurement practices:** If the Pentagon's procurement practices remain rigid and continue to favor established defense contractors, Shield AI may find it difficult to secure long-term contracts that are crucial for its sustained growth and scalability.

## Funding Rounds

**Series F**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series F | $43.786 | Sep 2023 |

**Series E**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series E | $40.3886 | Dec 2022 |

**Series D**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series D | $24.042 | Aug 2021 |

**Series C**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series C | $11.6123 | Feb 2021 |

**Series B**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series B | $7.8604 | Aug 2019 |

**Series A**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series A1 | $5.1228 | Jan 2019 |
| Series A | $1.8503 | Apr 2017 |

**Seed**

| Share Name | Issue Price | Issued At |
|---|---|---|
| Series Seed | $0.8017 | May 2016 |

*Figures sourced from the latest Certificate of Incorporation we have available.*

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